NSNFP Objectives, Accomplishments & FY-02 Work Scope

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Program Objectives

- Provide the research and development needed to package, store, transport, and dispose of DOE SNF
- Ensure the Yucca Mountain repository license includes basis for DOE SNF
- Ensure repository performance-based acceptance criteria are established for all DOE SNF
- Provide packaging and characterization guidance to all DOE sites

Program Accomplishments

- DOE SNF included in repository baseline
  - Co-disposal with standardized canister
- DOE SNF included in Yucca Mountain EIS
- Licensing
  - Information versus data
  - QARD Change
  - Tentative agreement on licensing strategy

Program Accomplishments

- Interface Control Document
  - MCO, Standardized Canister, Transportation
- Standardized DOE SNF Canister
  - Deployment with Foster Wheeler
  - ASME Code Changes
- Transportation Specification
- High Integrity Can (HIC) Development
- Integrated Repository Receipts Schedule

Program Accomplishments

- TSPA
  - PA of selected DOE SNF in a HIC
  - Geochemical interactions in a failed co-disposal package for FFTF, LWBR, & FERMI
- Criticality Analysis
  - N-Reactor & FSV Criticality Analyses
- Design Basis Events Analysis
  - DOE SNF BDBE Dose Calculations
  - Canister transfer system event sequence calculations

Program Accomplishments

- Path forward for Safeguards and Security defined
  - Separability workshop completed
- Advanced Neutron Absorber development initiated
  - Candidate materials identified
  - Initial ingots cast & reduced
  - Successful weld tests conducted

Program Accomplishments

- Draft SNF drying standard in review by ASTM
- Release Rate Testing continued
  - Initial colloid test data supplied to RW
- Integrated SNF Technology Development with EM-50
- Spent Nuclear Fuel Database

NSNFP Budget

- Proposed FY-02 budget of $10M
- Decreased from planning level of $14.7M
- The NSNFP is making the most of limited funding to increase the probability that all DOE SNF is ultimately accepted at the repository

Key Activities

- Repository Analysis
  - Criticality
    - Phase I & II Activities (In WP intact & degraded analyses)
    - Phase III Activities (External to WP analyses)
    - Analysis of Waste Package w/Dual SNF canisters
  - Source Term
  - TSPA
  - DBE (ISA) analyses for DOE SNF
  - NSNFP Yucca Mountain Representative
  - Chemical Reactivity
    - Complete limited calculations on N-Reactor

Key Activities

- Materials Analysis
  - Develop Gd-Ni structural neutron absorber alloy
  - Generate drying standards for SNF
  - Cesium/Rubidium interactions
- Release Rate Testing
  - Evaluation will continue on three fuel types; uranium metal, mixed oxide, and aluminum based
- Licensing Support Activities

Key Activities

- Canister and Basket
  - Support to Idaho privatized project
  - ASME code committee
- Transportation
  - RW liaison activities
  - Maintain Integrated Repository Receipts Schedule
- Spent Nuclear Fuel Database
- Quality Assurance Program, Records Management